1. (Amended) A DNA sequence which is selected from the group consisting of (a) at least part of the sequence set out in the appended sequence listing; and (b) a variant of a sequence (a) which encodes a polypeptide which is at least 80%, identical with the corresponding peptide as set out in table II; provided that it is not a sequence encoding all or part of the polypeptide consisting of amino acids 1-920 encoded by *mon AI* as set out in table II.

A1

A2

8. (Amended) A DNA sequence according to claim 1 encoding any one or more of the domains as set out in Table I or a variant or part thereof.

9. (Amended) A DNA sequence according to claim 1 which has a length of at least 30 bases.

10. (Amended) A recombinant cloning or expression vector comprising a DNA sequence according to claim 1.

11. (Amended) A transformant host cell which has been transformed to contain a DNA sequence according to claim 1 and which is capable of expressing a corresponding polypeptide.

12. (Amended) A hybridisation probe which is a DNA sequence according to claim 1.

13. (Amended) A method of detecting a PKS cluster comprising using a probe according to claim 12 to detect a PKS cluster, optionally followed by isolation of the detected cluster.

A2 cont.

14. (Amended) A method of detecting genes comprising using a probe according to claim 12 which encodes at least part of a polypeptide having a known function to detect genes encoding polypeptides having analogous function.

15. (Amended) A method according to claim 14 wherein the polypeptide of known function is AT of module 5 or the regulatory protein encoded by *mon RI*.

A3

17. (Amended) A method of detecting the presence of a gene cluster which governs the synthesis of a polyether, which comprises using a probe according to claim 16, and optionally isolating a gene cluster detected thereby.

18. (Amended) A method of detecting a gene comprising using a probe according to claim 12 which comprise a polynucleotide which binds specifically to a gene responsible for levels of activity of the monensin gene cluster, for detecting an

analogous gene in a gene cluster for biosynthesis of another polyketide, optionally followed by a step of manipulating the gene detected thereby to alter the level of expression of said other polyketide.

19. (Amended) A method according to claim 18 wherein the gene is a regulatory gene, resistance gene or thioesterase gene.

A3 Cont.

20. (Amended) A method of expressing a heterologous gene in *S. cinnamonesis* comprising inserting said gene so that it is expressed under the control of the *mon RI* gene or variant and a monensin promoter.

21. (Amended) A method of expressing a polyketide other than monensin which includes using a portion of the monensin gene cluster encoding a polypeptide having chain terminating activity, comprising at least one of *mon AIX* and *mon AX* or a mutant, allele or other variant thereof encoding a polypeptide having chain terminating activity, to effect chain release of said polyketide other than monensin.

22. (Amended) A method of synthesising a polyketide other than monensin which includes using a portion of the monensin gene cluster encoding a polypeptide having carbon-carbon double bond isomerase activity comprising at least one of

mon BI and *mon BII* or a mutant, allele or other variant thereof having isomerase activity to provide a desired stereochemical outcome in the synthesis of said polyketide other than monensin.

A3 CONT.

23. (Amended) A polypeptide encoded by a portion of the monensin gene cluster, comprising at least one portion selected from *mon BI* and *mon BII* or a mutant, allele or other variant thereof, having carbon-carbon double bond isomerase activity, or at least one of *mon AIX* and *mon AX* or a mutant, allele or other variant thereof having chain terminating activity.

A4

26. (Amended) A method for the biosynthesis of a polyketide other than monensin which comprises using a portion of the monensin gene cluster encoding a peptide having epoxidase or cyclase activity, to provide a said activity in the biosynthesis of said polyketide other than monensin.

A5

29. (Amended) A process according to claim 27 wherein the starter unit also includes an AT_q domain derived from an AT domain which is naturally associated with the KS domain.

A6

33. (Amended) A DNA sequence according to claim 30 wherein said loading module is adapted to load a starter unit other than a starter unit normally received by the adjacent extension module.

A7

35. (Amended) A polyketide synthase encoded by the DNA sequence of claim 30.

A8

37. (Amended) A vector containing a DNA sequence of claim 30.

38. (Amended) A transformant cell transformed to contain a DNA sequence of claim 30.

A9

42. (Amended) A method of producing monensin comprising culturing the organism of claim 41.

Please add new claims 46 and 47 as follows:

A10

46. (New) A DNA sequence according to claim 1 which is a variant of a sequence (a) which encodes a peptide which is at least 90% identical with the corresponding peptide as set out in table II.

47. (New) A DNA sequence according to claim 1 which has a length of at least 60 bases.